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INSTITUTIONAL OBJECTIVES AND PATTERNS OF STUDENT CHANGE.

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COLLEGE OBJECTIVES WERE REDEFINED AND STUDENT CHANGE EXAMINED TO DETERMINE WHETHER--(1) STUDENTS CHANGE IN COLLEGE, (2) WHEN AND WHERE CHANGE OCCURS, AND (3) DEVELOPMENTAL PRINCIPLES WHICH COULD APPLY TO STUDENT CHANGE TO FACILITATE DECISIONS. DEFINITIONAL ACTIVITIES YIELDED SIX MAJOR SUBCATEGORIES OF BEHAVIORS AND STUDENT CHARACTERISTICS--GOAL DIRECTEDNESS, PERSONAL STABILITY AND INTEGRATION, VENTURING, RESOURCEFULNESS AND ORGANIZATION, FULL INVOLVEMENT, MOTIVATION AND PERSISTENCE, AND INTERDEPENDENCE. TO DESCRIBE THE TIMING AND PATTERNS OF STUDENT DEVELOPMENT, FACULTY STUDIES OF STUDENT RECORDS WERE UNDERTAKEN WITH A PREPARED QUESTION FRAMEWORK. MOST CHANGE WAS FOUND TO OCCUR DURING THE FIRST TWO YEARS OF COLLEGE. THE PATTERNS OF VARIOUS VECTORS OF CHANGE ARE DESCRIBED. DEVELOPMENT OCCURS ACCORDING TO GENERALIZABLE SEQUENCES, AND THROUGH SEQUENCES OF DIFFERENTIATION AND INTEGRATION. DEVELOPMENT IS CONGRUENT RATHER THAN COMPENSATORY. DEVELOPMENT ALSO DECREASES AS RELEVANT CONDITIONS BECOME MORE CONSTANT. THE RELEVANCE OF THESE FINDINGS FOR INSTITUTIONS PLANNING INNOVATION AND EXPERIMENTATION IS DISCUSSED. QUESTIONS ARISING FROM THE FINDINGS ARE ALSO REVIEWED. (PS)

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# Institutional Objectives and Patterns of Student Change[1].

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Two interrelated trends are rapidly gaining momentum in higher education. First, the relevance and effectiveness of the nation's colleges and universities increasingly has been called into question by students, college faculties and administrations, and governmental agencies. The Berkeley riots, the National Conference on Student Stress and the Campus Environment Studies of the United States National Student Association supported by the National Institute of Mental Health, (9) the Conference on Innovation in Higher Education and the follow up meetings supported by the Office of Education, (11) and the establishment of the Union for Research and Experimentation in Higher Education are only the white caps topping a ground swell of increasing magnitude.

Second, as the establishment of the Association for Institutional Research and its rapid growth in membership attests, research concerning higher education seems to increase geometrically each year. Further, more and more of this research is directly addressed to institutional impact, to trying to discover relationships between institutional policies and practices and student development.

These two conditions, along with other pressures, are leading colleges and universities to confront more forthrightly three major questions:

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1. This research was carried out in the context of a six year Experiment in College Curriculum Organization at Goddard College supported by the Ford Foundation. Preparation of this report has been in part supported by the National Institute of Mental Health, Grant #MH01929-02.

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1. Do our students change while here and is that change congruent with our objectives?

2. If change occurs, when and where does it take place?

3. Are there developmental principles which apply to student change in college which could help guide decisions?

The studies reported here are relevant to these questions as are the procedures by which the institution came to grips with them. Like current explorations of another space, two stages were required to get into orbit: first, re-definition of objectives; second, examination of student change.

## Process

The process began with re-definition at a more concrete level of two major institutional objectives, the development of independence and development of purpose. First, there was general discussion in faculty meetings concerning what was meant by independence and what behaviors represented such development. Then each faculty member named five students who best represented high levels of independence as he conceived it and described the criteria underlying his choice. A faculty committee received these documents and pooled the criteria submitted, generating a definition which was returned to the general faculty meeting for further discussion and modification. Surprisingly enough, a single two hour meeting sufficed to produce acceptance by the faculty of a statement which represented their views concerning more specific dimensions of the development of independence. The Coordinator of Evaluation compared students most frequently nominated with their non-nominated peers and found significant differences between the two groups on a battery of tests and inventories administered to all at the end of their sophomore year. These differences were congruent with the major dimensions of the definition.

A similar procedure was followed to clarify what was meant by the development of purpose. This time things didn't work out quite so neatly and two full

faculty meetings were required to reach agreement on the components of the definition. Here again nominated students and their non-nominated peers were compared and again significant differences were found congruent with the definition. Both these studies are reported elsewhere (1, 2).

This work had accomplished two things. Institutional objectives had been translated into more concrete terms, and particular measures which characterized more highly developed students had been identified. Thus assessment of the development of independence or of purpose could be undertaken through test-retest studies of first, second, and fourth year data. Further, it would be possible to see whether development occurred primarily during the first two years, the last two, or rather evenly over the four year period. A report of these test-retest studies is also available in the context of a general report on this Experiment (3).

The definitional activities reported above had yielded six major sub-categories of behaviors and characteristics which were labeled: Goal Directedness; Personal Stability and Integration; Venturing; Resourcefulness and Organization; Full Involvement, Motivation and Persistence; Interdependence. But it seemed wise to push further; to see whether objectives could be further detailed and to see whether the timing and patterns for such development could be more precisely described. To these ends the faculty studies of student records were undertaken.

For each of these six variables questions concerning specific behaviors or attitudes represented in the four year records of the 1964 graduates were posed. Because Goddard uses a system of written self-evaluations and instructor comments rather than grades and examinations, and because the non-resident work term, the on-campus program, community participation and extracurricular activites are subject to evaluation as well as academic study, student records are rich in material suitable for this kind of analysis. These records were rated for each semester on each question. Teams of four or five faculty members each assumed responsibility for one or more of the six variables to be assessed.

Preliminary discussion and trial ratings of several students helped create common standards for a scale from zero to ten with five set as the general expectation, average, or norm. The rating tasks were then divided so that each student was rated independently by two faculty members on each question. A student's semester score on a given variable was the pooled ratings on questions relevant to that variable. Faculty members were asked to rate a single semester for several students before returning to rate another semester for a particular individual. It was also suggested that semester reports be drawn at random from a student's folder. It was hoped that these practices would minimize three things:

1. The halo effect from one semester to another for a particular person.

2. Systematic distortions arising from moving in an ordered fashion from beginning semesters to later semesters.

3. Systematic distortions arising from subtle changes in the rater's standards over time.

The ratings for each of the six variables which resulted from this process were then standardized and subjected to multiple discriminant analyses (4) to discover whether change had occurred, and if so, which variables carried greatest weight. The actual questions posed for each variable are given as the results are discussed.

## Results

Statistically significant change (beyond .01 level) was reflected by the multiple discriminant analysis, and covariance analyses of the scales individually revealed significant change (.01 level) on each. Weightings on the discriminant analysis indicated that ratings on Goal Directedness changed most. Next came Personal Stability and Integration, followed by Venturesomeness, Resourcefulness and Organization, Full Involvement, Motivation and Persistence, and finally, Interdependence. Examination of each of these reveals the differ-

ent timing and patterns of change which occurred.

Goal Directedness

The faculty described the purposeful student as one who had conscious and fairly well defined goals meaningful to himself. He had developed an increasing ability to see the relationships between his purposes and other aspects of his life, and his work increased in focus and depth through its relationship to his goals. The questions addressed to the records for rating were:

1. Does the student plan his program with reference to a clear goal or purpose?
2. Are courses or independent studies evaluated in terms of their helpfulness or contribution to a larger purpose?
3. Are objectives for study explicitly related to more general plans or purposes?
4. Is there recognition of gaps in knowledge or skills in relation to purpose?
5. Are efforts made or plans formulated to deal with gaps or weaknesses?
6. Are there general expressions of feeling lost, at loose ends, without any purpose or direction? (Reverse scoring)
7. Do plans for the Nonresident Work Term reflect concern for some general plan or purpose?
8. How solid does the final commitment seem?

Averaging of the ratings of these eight questions, from two independent raters yielded a score for each semester for each student, and the results are portrayed in Figure 1. In this figure as in the others to follow, the vertical lines approximate one standard deviation and the horizontal line connects the mean ratings.

(Insert Figure 1 about here)

It is clear that the increase on this variable is substantial and steady. It is also worth noting that the point of sharpest increase comes with the fourth semester. Goddard has Junior and Senior Divisions, and one applies for, and is accepted to, the Senior Division on the basis of his prior work. The

Senior Division application requires a description of the work to be undertaken during the last two years. This hurdle, necessitating further specification of what one is going to do and thus clarification of plans for the future, is probably responsible for the increase reflected at this time.

Personal Stability and Integration

Next in order of magnitude of change came Personal Stability and Integration. Both the independent student and the purposeful one were described by the faculty as having a higher level of stability and integration than their peers. They knew the kind of person they wanted to be and had a sense of balance and perspective. They tended to see things whole and with a well ordered set of values. They had sorted out what was important to them and were aware of their own strengths and weaknesses. They were relatively at ease about problems concerning academic work, future vocation, marriage and family life. It is not so much that such problems do not exist for them, or that they necessarily have resolved the problems, but that their level of anxiety and concern about such things is relatively low and their comfort and confidence in their present state with regard to such matters is relatively high.

The questions in this case were:

1. What is the student's level of reliability and responsibility on work program in relation to other responsibilities undertaken?
2. What level of personal stability and integration is reflected by student comments in relation to self, or self-development?
3. How comfortable is the student about the kind of person he is, or about the kind of person he was during the semester? How comfortable about his own past behavior is he?

(Insert Figure 2 about here)

Here also there is a picture of substantial and fairly regular change. It is interesting that the first semester ratings for students on this variable are considerably lower than for any of the others. We realize that the first

semester particularly presents a constellation of adjustment problems which are frequently quite upsetting and these ratings are congruent with that knowledge. It is interesting to note that in addition to a sharp rise from the first to the second semester, there is also another acceleration in the seventh semester. This may suggest that the transition from college to the adult world has already begun, and that with the imminence of the senior study and with graduation impending a step is taken toward a higher level of personal organization and integration. This pattern also supports Mervin Freedman's suggestion that "Perhaps we should think of a developmental phase of late adolescence, beginning at some point in high school or prep school and terminating around the end of the sophomore year in college; followed by a developmental phase of young adulthood that begins around the junior year and carries over to a yet undetermined extent in the alumni years." (6)

Venturing

Venturing was the label supplied for the student who is open to experience, willing to confront questions and problems, to discover new possibilities, to disagree and be autonomous, and to initiate things for himself. The questions used to make connections with the records were these:

1. How much does the student speak up in class? How ready is he to express his own ideas and join the battle? Does he brood and maintain a stoic silence or does he externalize his feelings and ideas?
2. How easily does he communicate with the instructor? How free is he to disagree?
3. To what extent does he engage in study or other activities to tackle perceived weaknesses or liabilities?
4. How frequently does he speak of lack of self-confidence, of fears which restrict his activities? (Reverse scoring)
5. To what extent does he seek out new, challenging, or unusual work term or summer experiences? To what extent is the work term used to engage in new

experiences or to test new skills or attitudes?

(Insert Figure 3 about here)

Students were rated higher for the first semester on this vector than on any other, and change is moderate here. The dip at the third semester is puzzling. It may be that this is a period of recovery or quiescence after the difficult adjustments of the first year. Perhaps the student wants to hold things fairly constant and safe for awhile, in order to consolidate some of the new positions achieved.

In another somewhat similar institution Lois Murphy observed, "We are familiar with students who find the multitudinous change involved in leaving their home settings to come to Sarah Lawrence overstimulating, especially when the home setting is very different from what they find at college. The experience of overstimulation is increased by the multitutde of choices that must be made and the degree of responsibility for planning one's own program, the lack of structured social groups, the need to find one's way socially as well as intellectually. In other words, some students feel themselves buffeted about by so many new currents and new experiences, new opportunities, demands, and challenges that it is hard to organize their lives." (7) These words certainly are apposite to the first year experiences of the Goddard student and as a result he may be content to be somewhat free from new challenges and from experiences which might create additional disequilibrium during his third semester.

Resourcefulness and Organization

The faculty described both the independent student and the purposeful one as resourceful and well organized. He is practical and able to work out intermediate steps to a goal. He knows when he needs help how to get it; he is efficient, and knows how to make good use of the resources available to him. Four questions were used for this vector of development:

1. How freely does the student make use of a wide range of resources for his own learning?

2. How well does he make plans, follow through on them, or modify them consciously and judiciously and then carry through?

3. How well does he discover or develop new ways of going at matters of concern to him? Of circumventing or overcoming obstacles that appear?

4. To what extent is he able to handle a variety of responsibilities and sustain good effort and performance in relation to all? How well is he able to avoid being overwhelmed or snowed under at the end of the semester or at other times when several obligations seem to coincide?

(Insert Figure 4 about here)

Here again the picture is one of substantial change. Appearing for the first time is something which might be called the sigh of relief, the pause that refreshes, or the Senior Division slump. There is a sharp dropping off of performance in the fifth semester after admission to the Senior Division, so that there is room to draw that hurdle right in here if we wish. Once over the hurdle the student comes down on the other side about where he was when he started to take off. Fortunately though, he has to keep running, and there is another higher one looming ever closer for which he rather quickly seeks altitude. This pattern recurs in the last two vectors of change with even greater force.

Full Involvement, Motivation, and Persistence

The faculty definitions of the independent student and of the purposeful student both gave a prominent place to motivation and persistence. The independent student, it was said, is motivated and working for his own satisfaction. He has the energy and determination to keep at a job. The purposeful student is willing to tackle routine or difficult jobs congruent with his purposes and is resistant to obstacles. He continues in spite of mistakes or difficulties. He can sustain effort in the face of distractions and seeks out extra activities in addition to academic work which relate to his goal. The questions used were:

1. In general, how well motivated, persistent, and fully involved was this student?

2. What was the general level of effort reflected in preparation for classes, work on papers, and in relation to other kinds of responsibilities?

3. How consistent, steady, and regular was the student's output?

4. How great was the student's interest, enthusiasm, and intensity of involvement with his work?

5. How good was his attendance in relation to the general expectations and the nature of the class?

6. What was his level of participation as compared to that which seems to be usual or satisfying for him?

(Insert Figure 5 about here)

As with Resourcefulness and Organization, there is fairly substantial change with a quite similar pattern. There is an even sharper drop after admission to the Senior Division; fifth semester ratings are substantially below those for either the third or fourth semester. They do remain higher than those for the first two semesters, so at least there is not complete regression. In this case the recovery is stronger for the sixth semester; so much so that the students are about where they would have been had the rate of development continued uninterrupted.

Interdependence

Interdependence was the variable on which ratings reflected least change. Mature independence rests partly upon recognition of one's dependencies, upon recognizing that essentially one is involved with a network of interdependencies. The independent student therefore, the faculty said, is non-punitive, non-hostile, attuned to the whole, aware of his own resonances with it and his own responsibilities to it. The questions they used were:

1. Is the student ready and able to work with others on community affairs such as recreation events, community government, house business, etc?

2. Does the student pull together with others well on work program? To what extent is he conscious of his role in a broader work program context, when such

a relationship exists?

3. Does he seem to be aware of the relationship between his own behavior and community welfare in general?

4. Is the student tolerant of differences in behavior or in point of view on the part of other students or faculty members?

(Insert Figure 6 about here)

It is interesting to note that the sharpest change occurs in the third semester, and that fourth semester ratings are nearly as high as those for the seventh semester. This general pattern is consistent with our observation that second year students become heavily involved in community activities, and that the involvement does not increase much beyond that; ratings for the sixth and seventh semester are about the same as those for the third and fourth. Here again, as with the previous two vectors of change there is a conspicuous decline during the fifth semester.

## Discussion

There seem to be at least two general patterns of change and then additional secondary patterns depending upon how far one thinks the data can be pushed. There is the fairly even and regular pattern of change for Goal Directedness and Personal Stability and Integration, and the pattern with the fifth semester slump as reflected for Resourcefulness and Organization, Full Involvement Motivation and Persistence, and Interdependence. Within each of these two clusters further distinctions are possible. In the case of Goal Directedness, the fourth semester seems to carry particular weight and in the case of Personal Stability and Integration it is the first and seventh semesters.

Within the other cluster, change in Resourcefulness and Organization, and Interdependence occurs during the first two years, while it is during the Senior Division semesters that greatest total gain in Involvement, Motivation and Persistence occurs, even though this vector shares with the other two a sharp regression during the fifth semester. Venturing, with its sharp decline during

the third semester remains in a class by itself, although it shares with Interdependence the picture of rather minimal change during the Senior Division years.

In general, most change seems to occur during the first two years. However, more detailed examination indicates that with Goal Directedness and Personal Stability, change is quite evenly dispersed over the four years, while Interdependence and Venturing change most during the first two, and Involvement, Motivation and Persistence, changes most during the last two.

Thus the question, "Do our students change while here and is that change congruent with our objectives?", can be answered affirmatively and the patterns of various vectors of change have also been susceptable to description. Of course the generalizability of these patterns to other institutions has yet to be demonstrated and is beyond the scope of this study. It is to be expected that if differences in institutions make for differences in development, then some patterns would be unique; those relating to the Junior-Senior Division arrangement would be likely candidates for example.

But what of the third question? Are there developmental principles which apply to student change in college? Four seem to receive support, albeit tentative:

First, development occurs according to generalizable sequences. That is to say, when a group of relatively similar persons undergo relatively similar experiences, observed over a period of time, change occurs according to recognizable patterns, patterns which differ depending upon the particular kind of change under consideration.

Erik Erikson puts it this way, "Whenever we try to understand growth it is well to remember the epigenetic principle which is derived from the growth of the organism in utero. Somewhat generalized this principle states that anything that grows has a ground plan, and that out of this ground plan the parts arise, each part having its time of special ascendancy, until all parts have arisen to form a functioning whole....it is important to realize that in the

sequence of his most personal experiences the healthy child, given a reasonable amount of guidance, can be trusted to obey the inner laws of development, laws which create a succession of potentialities for significant interaction with those who tend him." (5) The distinctive patterns discovered above suggest that this principle still holds during the college years.

Second, development occurs through sequences of differentiation and integration.

As Nevitt Sanford has formulated it, "A high level of development in personality is characterized chiefly by complexity and by wholeness. It is expressed in a high degree of differentiation, that is, a large number of different parts having different and specialized functions, and in a high degree of integration, that is, a state of affairs in which communication among parts is great enough so that the different parts may, without losing their essential identity, become highly organized into larger wholes in order to serve the larger purposes of the persons....This highly developed structure has a fundamental stability which is expressed in consistency of behavior over time....But the structure is not fixed once and for all, nor is the consistency of behavior absolute; the highly developed individual is always open to new experience, and capable of further learning; his stability is fundamental in the sense that he can go on developing while remaining essentially himself." (8) Such development may occur in a step like process where increasing differentiation is accompanied by an acceleration in behavioral change, which is then followed by development of integration at a higher level, during which deceleration of change in external behavior occurs. The patterns for Goal Directedness and for Personal Stability and Integration conform to this principle quite well.

Third, development is congruent rather than compensatory. Terman's longitudinal study of gifted persons (10) well documented this principle, and it is supported further here. Change occurs in all vectors, and not in some at the expense of the others. Even though the patterns of change differ the relation-

ships among them do not suggest that lack of change in one area is compensated for by greater change in another. When the figures are laid one above the other the picture is more of a single cord proceeding upward with interweaving strands, than of two separate cords proceeding in opposite directions.

Fourth, development decreases as relevant conditions become more constant. Thus, the approach of entrance to the Senior Division provokes acceleration in Goal Directedness, and with assimilation of the new experiences of the first semester and in anticipation of graduation Personal Stability and Integration moves to higher levels; plateaus and regression follow admission to the Senior Division and entrance into the comfortable Junior Year. Freedman makes a similar observation of Vassar alumni, observing that "the increased stability and well-being of alumnae as compared to seniors is primarily a product of the less rigorous lives of the former, the lessened intensity of the demands made upon them." (6)

These principles clearly have relevance for institutions planning innovation and experimentation, or institutions facing decisions concerning current practice. If the dimensions of development for students in an institution can be identified and patterns of change described, then questions concerning the nature of experiences to be introduced and the timing and location of their introduction can be answered more soundly. The existence of plateaus and points of regression suggest periods during the students' experience where enrichment of conditions or additional stimuli relevant to that vector of change might be helpful. Thus the fifth semester slump in three variables at Goddard suggests the need for some attention to what is asked of students during this time, some attention to the differences in student experience during this period as opposed to others. And finally, as long asthe strands of development generally move along together, new programs, new conditions of living, new experiences can be added to foster change in some areas, without great risk of diminished development in others.

Of course numerous questions remain which these studies only raise more sharply. These are students who graduated, who successfully completed a four year experience. What is the picture for those who left before graduating? What kinds of development occur among the drop-outs who are at the institution for varying lengths of time? And more generally, what really accounts for these differences in pattern and timing? What elements of the college program operate significantly in these various areas? What in the lives of students affects them such that these different kinds of development occur? And finally how permanent are these changes? How much have the changed behaviors reflected in the records resulted in more enduring changes in the individuals themselves, changes which will be sustained in future contexts more benign or malignant?

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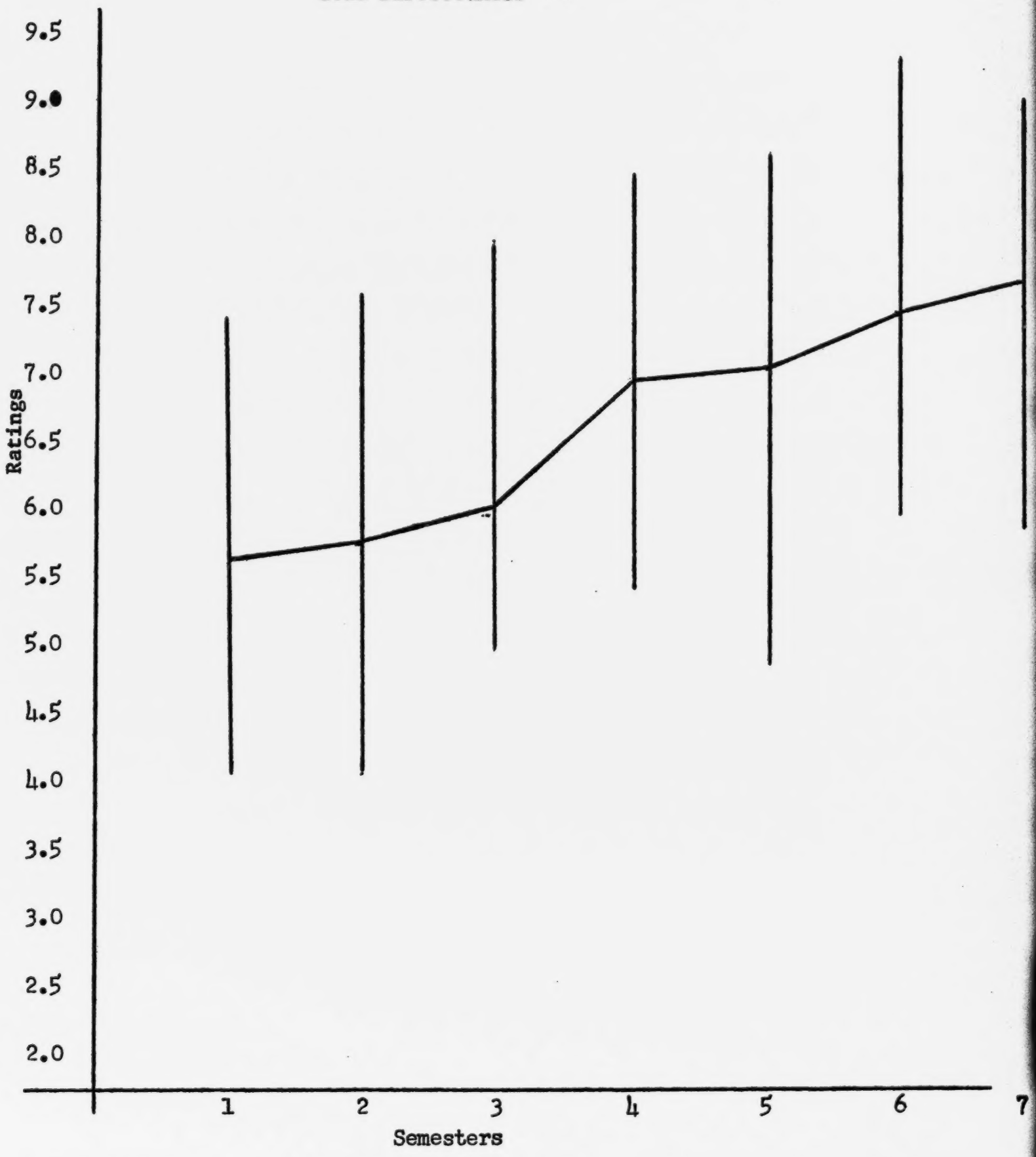
Figure 1.

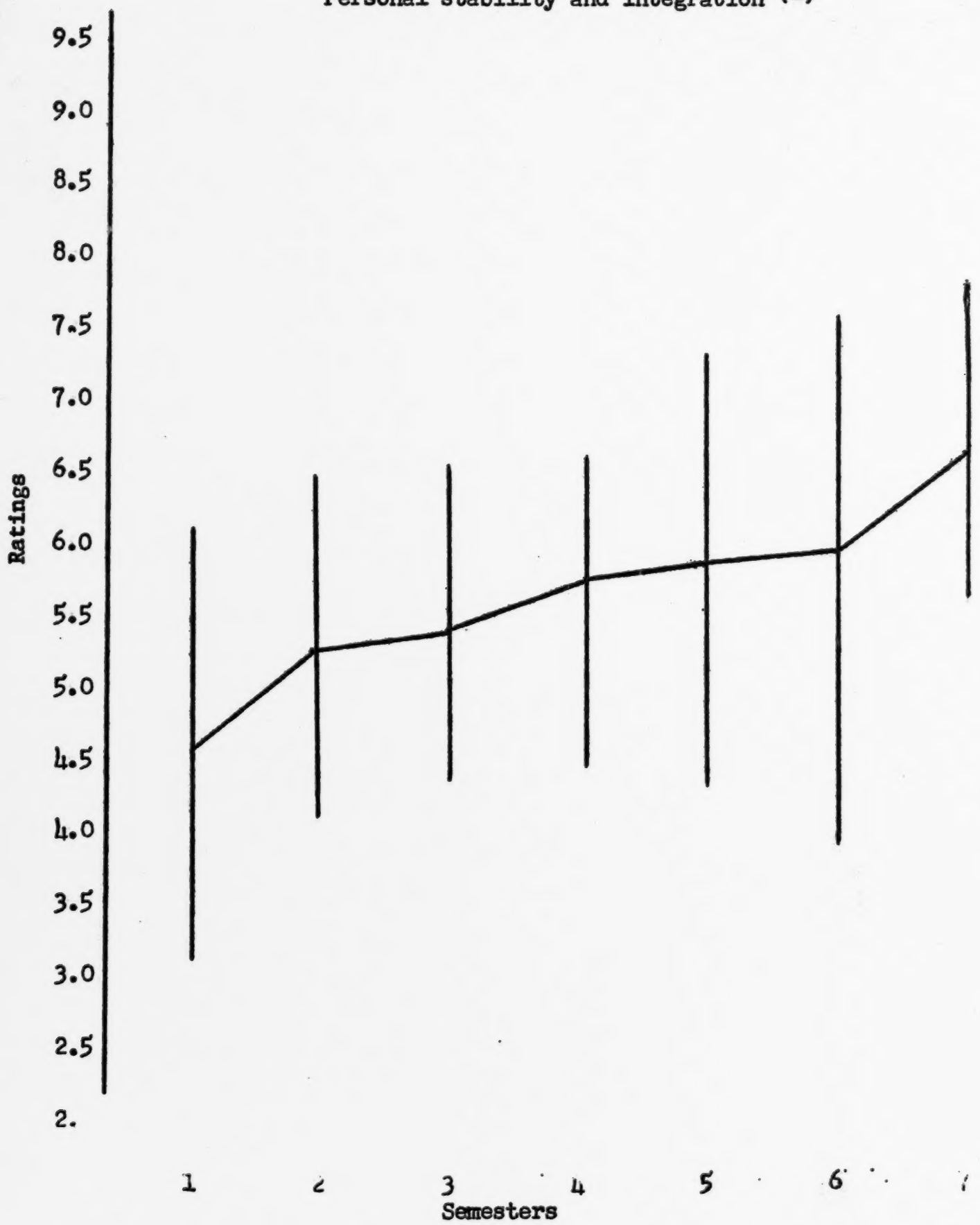
Goal Directedness (a)




(a)Difference in means for 3rd and 4th semesters significant beyond .05 level. Horizontal line connects mean ratings (N = 20). Vertical line indicates plus and minus one standard deviation.

Figure 2.

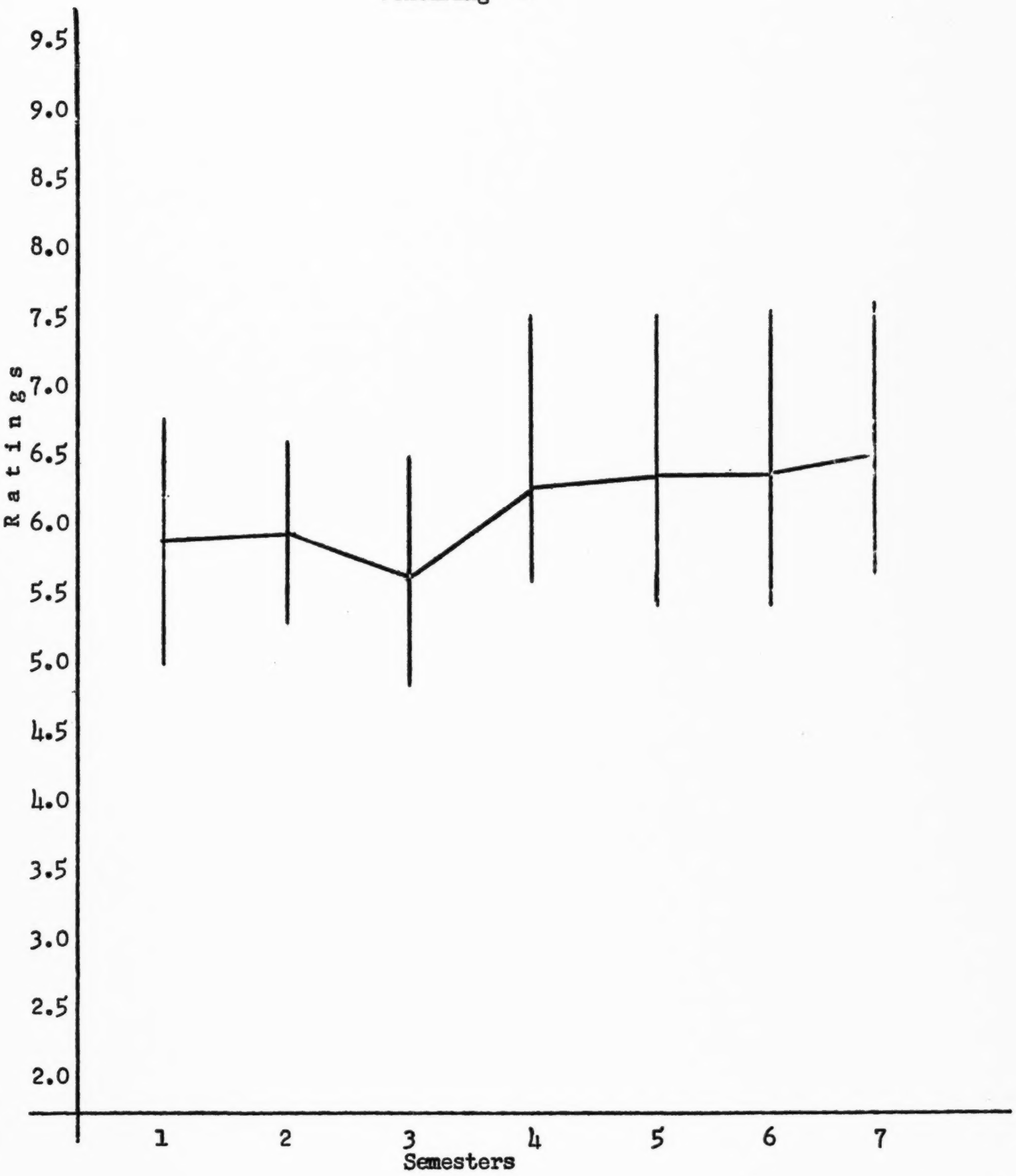
Personal stability and integration (a)




(a) Difference in means between 1st and 2nd semesters significant at .10 level, between 6th and 7th semesters at .06 level. Horizontal line connects mean ratings (N = 20). Vertical line indicates plus and minus one standard deviation.

Figure 3

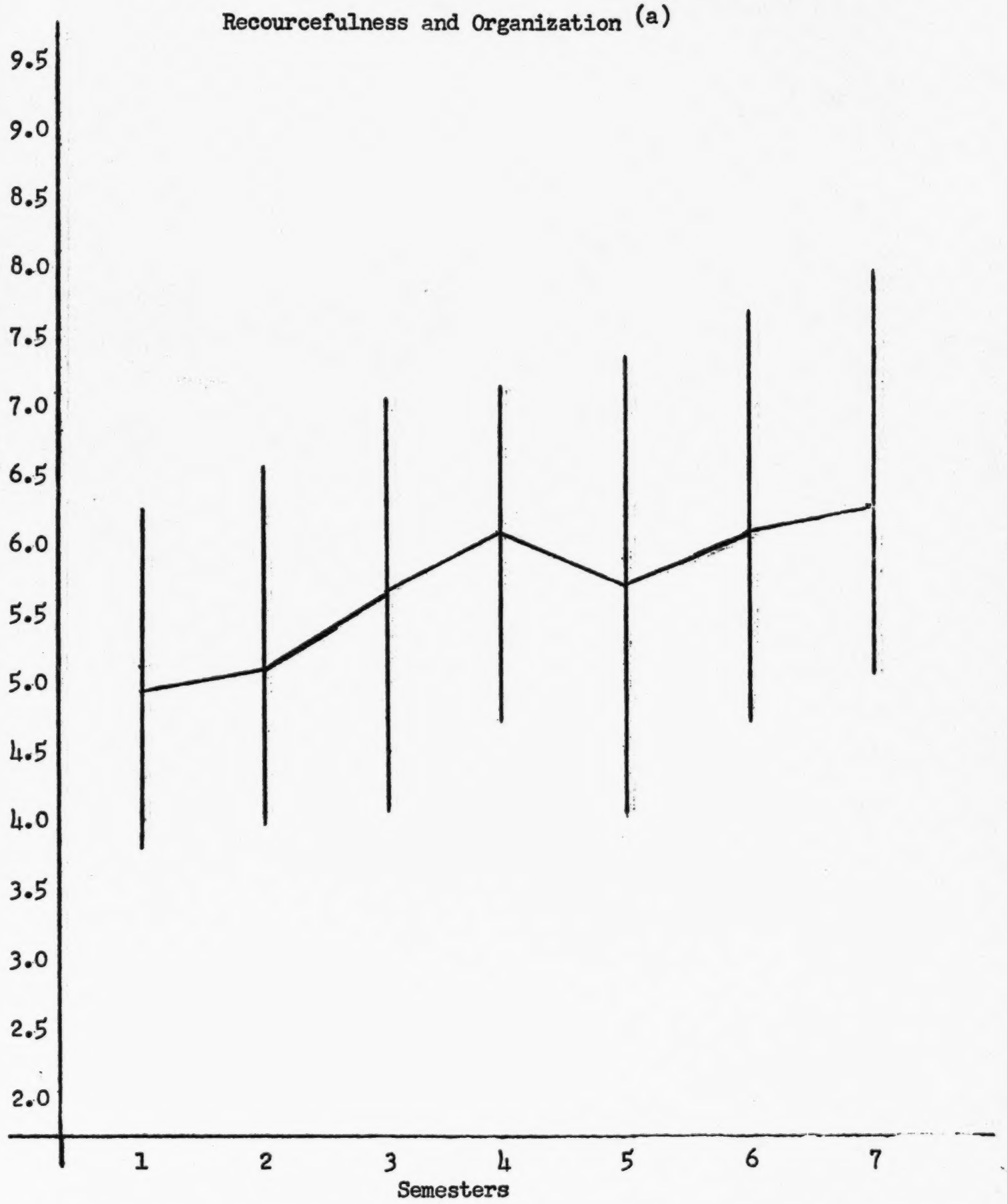
Venturing (a)




(a) Difference in means for 1st and 4th semesters significant beyond .05 level. Horizontal line connects mean ratings (N = 20). Vertical line indicates plus and minus one standard deviation.

Figure 4

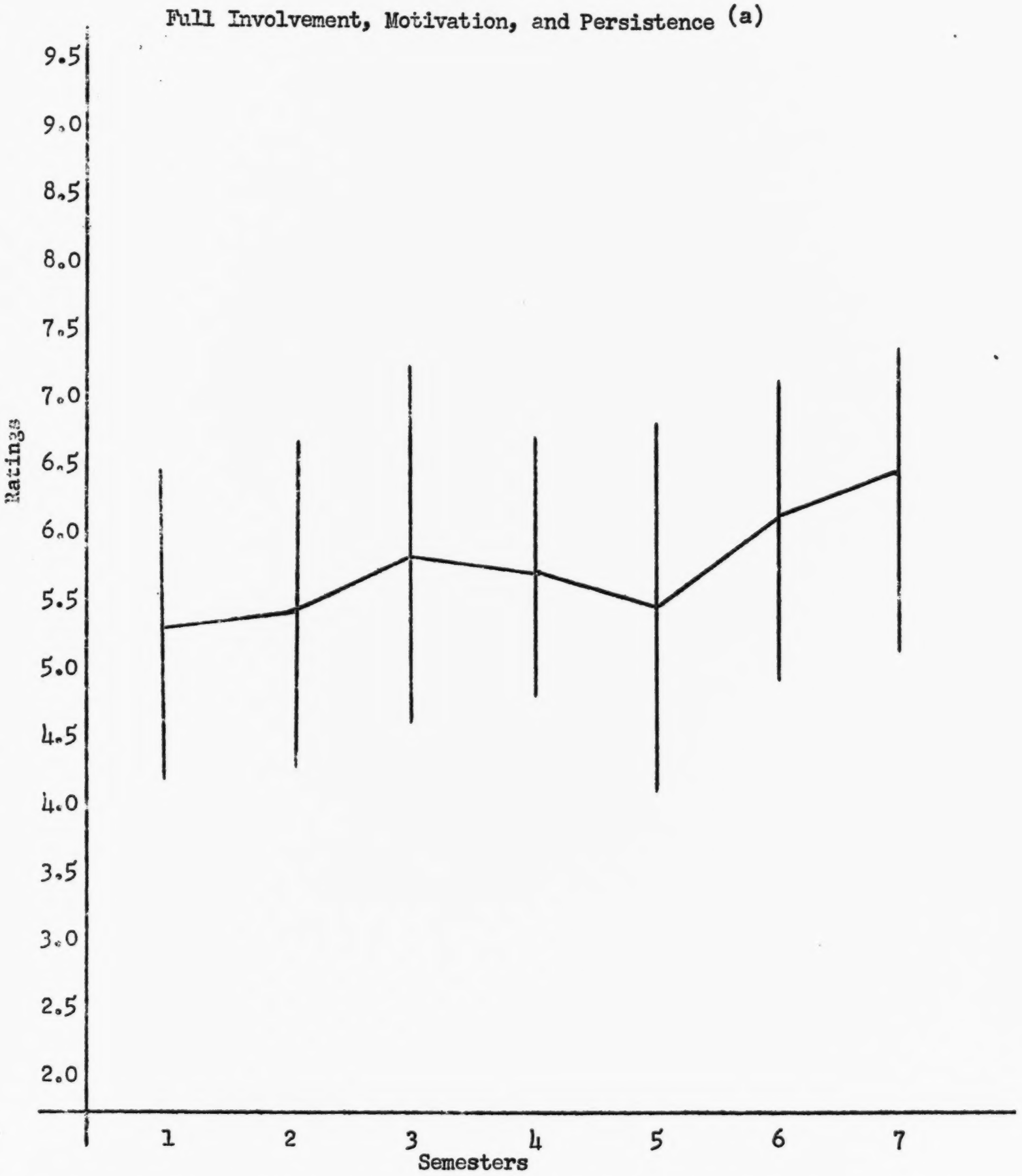
Recourcefulness and Organization (a)




(a) Difference in means for 1st and 4th semesters significant beyone .01 level. Horizontal line connects mean rating (N = 20). Vertical line indicates plus and minus one standard deviation.

Figure 5

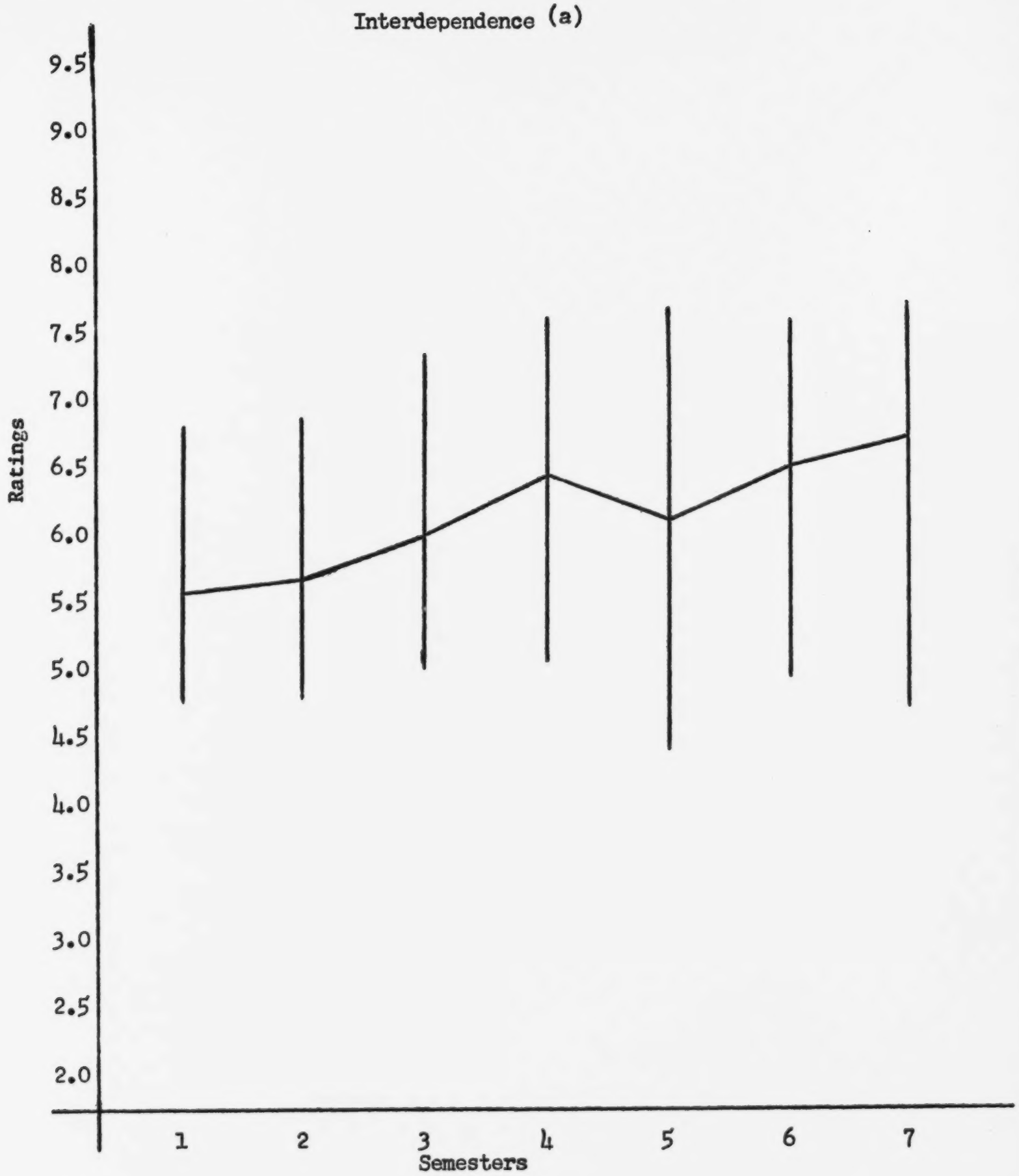
Full Involvement, Motivation, and Persistence (a)




(a) Difference in means for 1st and 4th semesters significant at .10 level; between 4th and 7th semesters beyond .01. Horizontal line connects mean rating (N = 20). Vertical line indicates plus and minus one standard deviation.

Figure 6

Interdependence (a)




(a) Difference in means for 1st and 4th significant at .03 level. Horizontal line connects mean rating (N = 20). Vertical line indicates plus and minus standard deviation.